

2020 Water Bodies Assessment and Recommendation Report

Arlington Conservation Commission

February 11, 2021

The Arlington Conservation Commission (ACC), through its Water Bodies Working Group (WBWG), continued the assessment of fourteen water bodies in the Town of Arlington, including five lakes and ponds and nine streams. A majority of these are negatively impacted by polluted runoff and stormwater discharges due to the highly urban nature of Arlington and surrounding towns. Most of these water bodies also have excessive aquatic invasive plants that degrade water quality, impede recreational use, and degrade aesthetics. In determining which water bodies could benefit from management measures using Town funding, the WBWG took a triage-based approach:

1. Water bodies that are in generally good shape, do not need much help, or whose issues are being addressed by other agencies or funding sources, e.g., Upper & Lower Mystic Lakes and Mystic River
2. Water bodies with some issues that could benefit from directed intervention, e.g. Spy Pond, Arlington Reservoir, Hills Pond, McClennen Park Detention Ponds (Reeds Brook)
3. Water bodies that are in poor shape with many issues that would need major efforts and additional funding to improve, e.g. Mill Brook and Alewife Brook.

Though the chemical treatments of several main water bodies must continue for the coming year to control aquatic invasives and harmful algal blooms, the WBWG is focused on obtaining the appropriate data to develop comprehensive management plans for Spy Pond, Arlington Reservoir, and Hills Pond. Our goal is to develop management plans where chemical use is only one step along with strategies to reduce inputs of nutrients to the water bodies, methods to manually remove aquatic plants, and techniques to prevent further spread and development of aquatic invasives.

Based on the 2020 analysis, the WBWG has identified the following priority locations for 2021.

Arlington Reservoir – A Town-owned water body in Arlington and Lexington with aquatic invasive water chestnuts that form dense, impenetrable mats at the water’s surface, which impair public use and water quality. These plants have been harvested mechanically every summer for many years and were again in 2020. For several years, the Mystic River Watershed Association (MyRWA) has been organizing hand harvesting events in the shallower areas but that was cancelled in 2020 because of COVID-19.

This water body was assessed as part of the Reservoir Master Plan project supported with CPA funding. One recommendation of that report was that the water chestnuts be harvested earlier than they have been in recent years in order to reduce seed production. In 2020 a study was conducted to evaluate the reservoir and its management practices. That study found:

Based on the data collected and observations during the survey, Arlington Reservoir is a shallow, eutrophic waterbody that has overall dense growth of aquatic vegetation. Of the five invasive species observed, three are very aggressive in their growth habits – water chestnut, curly-leaf pondweed, and Eurasian watermilfoil. As a result, there can be a significant decline in native vegetation and water quality. Management of these three species (and other non-native species) can improve water quality, recreational use, wildlife habitat, and aesthetic value.

The ACC is reviewing options for management of the Reservoir and may recommend additional actions beyond mechanical water chestnut harvesting.

There is also an on-going master plan for the Reservoir that primarily affects the land areas, but does include some bank restoration.

Hill's Pond – A small pond in the heavily used Menotomy Rocks Park with water quality and invasive plant problems. The Conservation Commission recommends continuing aeration, strictly limiting polluting activities near the pond or in areas that drain into the pond, maintaining a vegetated buffer strip around the pond four to ten feet wide of un-mowed grass or natural vegetation, and low-dose chemical treatments with aquatic herbicides to control algae and other detrimental water plants. Monthly site visits with proactive treatments in 2020 proved successful in reducing invasives, based on the annual report by the vendor, SOLitude. There was some algae growth that required treatment, but no harmful algal bloom (HAB) developed in 2020.

Mill Brook – The poor water quality of Mill Brook increased marginally in 2019 from D to a D+ (EPA/MyRWA 2019 Water Quality Report: <https://mysticriver.org/epa-grade/>). Mill Brook's poor water quality is primarily due to stormwater runoff; however, there may be illicit discharges to the brook from surrounding properties. The brook and its adjacent shore provide valuable wildlife habitat and opportunities for nature views.

The Mystic River Watershed Association (MyRWA) received CPA funds for improving public access, improving water quality, and reducing floodwaters along Mill Brook near Wellington Park.

In 2019, park construction included building more flood storage capacity and removing invasive terrestrial plants. The next phase of work, Phase III, will improve park amenities, improve stormwater quality, remove more invasive terrestrial plants, and create more robust native vegetated buffers along the brook's bank. Phase III construction will begin in Spring 2021 and is funded through CPA funds and a Judy Record Fund grant.



Phase III proposes to add native plantings and informal play components along Mill Brook in Wellington Park.

McClennen Park Detention Ponds on Reeds Brook – These stormwater detention ponds were created during the capping/closure of the landfill in this area, formerly called “Arlington Summer Street Landfill,” which was officially closed in 2006 with no further monitoring required. Technical contractor Woods Hole Group (WHG) submitted a memorandum report in 2019 summarizing their evaluation, based on site visits and sampling and analysis of surface water and sediment performed in 2018. WHG concluded that the observed iron flocculation at Reeds Brook does not constitute a condition of “readily apparent harm” (MassDEP terminology) to the environment of the wetland resource area. However, some sediment data

exceeded MassDEP sediment screening level benchmarks and several surface water samples exceeded the National Recommended Water Quality Criteria (NRWQC) for iron.

The ACC completed its goal in 2019 to investigate potential harm to the resource area of the iron flocculation at these detention ponds. Based on the findings, the WBWG concluded that there is no readily apparent harm to the resource area. However, given the findings of several metal concentrations that exceed screening levels, the ACC reported these findings in 2019 to the MassDEP Office of Solid Waste (OSW) and requested guidance or recommendations on further actions the Town might take. The WBWG has received no guidance from OSW in 2020. Therefore, since the 2019 report concluded that there is no “readily apparent harm” to the resource area, no additional investigations are planned at this time. The Town can decide if further investigations are warranted based on aesthetic values, as appropriate.

In 2020 the ACC in conjunction with Park and Recreation Commission and the Department of Public Works established a vegetated buffer strip around the ponds to control runoff and to improve wildlife habitat.

Spy Pond – One of Arlington's most heavily used open spaces for recreation, Spy Pond has an invasive plant problem within and around the pond. The surrounding managed landscape contributes to nutrient loading and low oxygen levels. Left untreated, invasive plants impair recreational use.

From 2017 to 2019, Spy Pond had problems with excessive aquatic vegetation despite yearly spot treatments. For 2020, the Working Group and Spy Pond Committee selected Sonar, a systemic herbicide that is effective in very low concentrations (parts per billion). Spy Pond was free of aquatic vegetation for most of the summer. The COVID-19 restrictions encouraged increased use of Spy Pond by sailboat, rowboat, kayak, fishing pole, and standup board. Spy Pond saw eagles, ospreys, cormorants, multiple mallard families, even a river otter. Because of the mild winter, there was no skating or ice fishing for the first time in memory.

The Spy Pond Committee produced an aquatic history of Spy Pond. It documents a 100-year problem with excessive nutrients, and a 60-year problem with excessive vegetation due to rooted, aquatic plants. The plan for 2021 is multiple, low-dose treatments. With less vegetation and less decayed biomass, algae will hopefully stay at the bottom of Spy Pond. The Working Group will seek scientific oversight of Spy Pond to improve its management.

The Conservation Commission approved MassDOT’s plan to dredge the sandbar in the northwest corner of Spy Pond. When completed in 2021, it will end a 25-year effort of the Spy Pond Committee.

Mystic River and Alewife Brook – The Mystic River retained a good EPA/MyRWA water quality rating of A- as in 2019. The Alewife Brook’s poor water quality remained at D in 2019 (EPA/MyRWA 2019 Water Quality Report: <https://mysticriver.org/epa-grade/>). In order to improve the water quality of the Mystic River and Alewife Brook, the Town is installing green infiltration infrastructure, such as rain gardens and infiltration trenches. Rain gardens and infiltration trenches have been constructed in East Arlington to filter pollutants out of stormwater before stormwater discharges to the Mystic River and Alewife Brook.

This work is managed by DPW and funded through Coastal Pollutant Remediation Grants from the Office of Coastal Zone Management (CZM). In 2020, a CZM grant was awarded with the partnership of the Mystic River Watershed Association (MyRWA) and the Town of Lexington. The grant will fund the construction of

more than 20 infiltration trenches in East Arlington. The trenches will reduce the amount of pollutants entering Alewife Brook and the Mystic River, improving compliance with the state stormwater permit. This grant expands on another CZM grant awarded to Arlington and MyRWA in 2019, through which two rain gardens and twenty trenches were constructed in East Arlington in 2020.



Two rain gardens were constructed at the Herbert Road/Milton Street intersection in 2020.

Floating Wetlands Pilot Project – In July 2020, the Conservation Commission approved an Eagle Scout project to install a series of floating wetlands in the McClennen detention basins and Hill’s Pond. The project’s goals included creating more wildlife habitat in the water bodies and removing excess nutrients from the water. The floating wetlands were installed in September 2020 and will remain in place until September 2021, after which the Eagle Scout program will assess the success of the floating wetlands



Floating wetlands were installed in McClennen Park and Hill’s Pond in 2020 as part of an Eagle Scout project. The floating wetlands support native plants to enhance wildlife habitat and reduce nutrients in the water bodies. The floating wetlands were constructed using corrugated plastic pipes, recycled water bottles, mesh, burlap bags, and zip ties. The floating wetlands are approximately 3’x4’ in dimension.



The Water Bodies Working Group has collected information for all the water bodies evaluated in support of this report. The Conservation Commission recommends that the Working Group monitor other locations that have not been identified above as a priority. All water body recommendations for actions and funding will be reviewed on an annual basis.

Respectfully Submitted by:

Water Bodies Working Group of the Arlington Conservation Commission:

David Kaplan

Chuck Tirone

David White

This report was approved by the Conservation Commission on February 4, 2021. The WBWG thanks Emily Sullivan, Conservation Agent, for her assistance in preparing this report.